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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,459	10/27/2003	Sang-Soo Kim	6192.0127.C1	2939

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EXAMINER

KOVALICK, VINCENT E

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,459

Applicant(s)

KIM ET AL.

Examiner

Vincent E. Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-45 is/are allowed.
- 6) ☒ Claim(s) 27-40 and 42 is/are rejected.
- 7) ☒ Claim(s) 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Applicant's Patent Application, Serial No. 10/693,459, with a File Date of October 27, 2003.

The cancellation of claims 1-26 is noted and entered in the record.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 27-28, 39-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (USP 5,523,187) taken with Van Dijk (USP 5,847,797) in view of Kim (USP 5,909,035).

Relative to claims 27, 39-40 and 42, Shin **teaches** the fabrication of a liquid crystal display device(col. 2, lines 30-46); Shin further **teaches**, a flat panel display comprising a first substrate; and a gate driving signal transmission pattern formed on the first substrate and in electrical communication with the plurality of gate lines for transferring gate signals. (col. 1, lines 19-26 and Fig. 1).

Shin **does not teach** a second substrate formed over a portion of the first substrate; or a plurality of gate lines and a plurality of data lines formed on the first substrate.

Van Dijk **teaches** a display device (col. 1, lines 55-67 and col. 2, lines 1-67); Van Dijk further

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teaches a second substrate formed over a portion of the first substrate (Abstract and Fig. 4A).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Shin the feature as taught by Van Dijk in order to provide a peripheral area on each substrate for mounding pixel driving control circuitry.

Shin taken with Van Dijk **does not teach** a plurality of gate lines and a plurality of data lines formed on the first substrate.

Kim **teaches** a thin film transistor display array (col. 4, lines 45-67 and col. 5, lines 1-55); Kim further teaches a plurality of gate lines and a plurality of data lines formed on the first substrate. (col. 1, lines 37-41 and Fig. 7).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Shin taken with Van Dijk the feature as taught by Kim in order to provide the wiring structure on the substrate to supply gate driving and data driving signals to the pixel matrix.

Regarding claim 28, Van Dijk further **teaches** the flat panel display wherein the first substrate and the second substrate include a display region and a peripheral region arranged around the display region, and wherein the first gate deriving signal transmission pattern is formed in a portion of the peripheral region (col. 6, lines 28-53 and Fig. 4A)

4. Claims 29-30 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin taken with Van Dijk in view of Kim as applied to claim 28 in item 3 hereinabove, and further in view of Uchiyama et al. (USP 5,737,272).

Relative to claims 29 and 37, Shin taken with Van Dijk in view of Kim **does not teach** the said flat panel display wherein the first gate signal transmission pattern comprises: an input terminal;

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an output terminal; and a main signal pattern arranged between and in electrical communication with the input terminal and the output terminal.

Uchiyama et al. **teaches** a liquid crystal display structure for mounting semiconductor devices (col. 3, lines 24-67); Uchiyama et al. further **teaches** said flat panel display, wherein the first and second gate signal transmission pattern comprises: an input terminal; an output terminal; and a main signal pattern arranged between and in electrical communication with the input terminal and the output terminal (col. 9, lines 30-48 and Fig. 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Shin taken with Van Dijk in view of Kim the feature as taught by Uchiyama et al. in order to provide the means for receiving input signals, generating the output signals and applying the said output signals to the required wiring pattern distribution. Regarding claim 30, Van Dijk further **teaches** the said flat panel display wherein the input terminal of the first gate signal transmission pattern is formed substantially adjacent to a data line group and is in electrical communication with a first external device (col. 6, lines 48-63 and Fig. 4A, IC items 58 connect to the external device and items 56-56'' constitute the signal transmission pattern).

Relative to claim 36, Van Dijk **teaches** the said flat panel display further comprising a second gate driving signal transmission pattern formed on the first substrate (col. 6, lines 38-41; items 56-56''). It being understood that each of the gate driving signal transmission patterns (Fig. 4A items 58-58' etc. constitutes multiple gate driving signal transmission patterns on the first substrate.

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Regarding claim 38, Uchiyama et al. further **teaches** the said flat panel display wherein the second input terminal is in electrical communication with the first external device and a second gate driver integrated circuit (IC) (col. 16, lines 19-35 and Fig. 8). It being understood that the first and second input terminals would be connected to the same control device that would generate the input driving signals to the gate drivers.

5. Claims 31 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin taken with Van Dijk in view of Kim and further in view of Uchiyama et al. as applied to claim 30 in item 4 hereinabove, and further in view of Nunomura et al.(USP 4,757,235).

Regarding claim 31 Shin taken with Van Dijk in view of Kim and further in view of Uchiyama et al. **does not teach** the display panel external driving means being mounted on a printed circuit board.

Nunomura et al. **teaches** an electroluminescent device with monolithic substrate (col. 3, lines 9-67 and col. 4, lines 1-2); Nunomura et al. further **teaches** a display panel external driving means being mounted on a printed circuit board (col.12, lines 34-37).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Shin taken with Van Dijk in view of Kim and further in view of Uchiyama the feature as taught by Nunomura et al. in order to provide a circuit mounting base compatible with the product application.

Regarding claims 34-35, Nunomura et al. further **teaches** a driving circuit mounted on a flexible base, said driving circuit driving the input signals of the display panel (col. 12, lines 34-37). It being understood that the display panel driving circuit (IC) generated signals include the gate driving signals.

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Claims 32-33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin taken with Van Dijk in view of Kim and further in view of Uchiyama et al. taken with Nunomura et al. as applied to claim 31 in item 4 hereinabove, and further in view of Maurinus et al. (USP 5,358,412).

Relative to claim 32, Shin taken with Van Dijk in view of Kim and further in view of Uchiyama et al. taken with Nunomura et al. **does not teach** said display comprising a flexible film arranged with a PCB on a substrate.

Maurinus et al. **teaches** assembling a flexible circuit to an LCD module (col. 4, lines 5-67 and col. 5, lines 1-67) : Maurinus et al. further **teaches** said display comprising a flexible film arranged with a PCB on a substrate (col. 1, lines 15-21).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Shin taken with Van Dijk in view of Kim and further in view of Uchiyama taken with Nunomura et al. the feature as taught by Maurinus et al. et al. in order to provide a circuit mounting base compatible with the product application.

Regarding claim 33, Nunomura et al. further **teaches** said display when the flexible film comprise a data drive IC that receives the data signal and generates a data driving signal (col. 12, lines 34-37).

Allowable Subject Matter

6. Claim 41 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 41, the major difference between the teachings of the prior art of record (USP 5,523,187, Shin; USP 5,847,797, Van Dijk and USP 5,909,035, Kim) and that of the instant invention is that said prior art of record **does not teach** a flat panel display wherein the first signal transmission pattern comprises: an input terminal connected to a tape carrier package (TCP), wherein the tape carrier package is arranged between the first substrate and the first external device; an output terminal connected to a second tape carrier package, wherein the second tape carrier package includes the gate driver integrated circuit; and a main pattern formed between and in electrical communication with the input terminal and the output terminal.

7. Claims 43-45 are allowed.

Regarding claim 43, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a flat panel display comprising: a first substrate; a second substrate arranged over the first substrate, wherein the first substrate includes a peripheral region arranged around a display region; a tape carrier package including a data driver integrated circuit, wherein the tape carrier package is arranged on a portion of a printed circuit board and an external device on the PCB generated data signals and gate signals; a first pattern formed in a peripheral region of the first substrate and in electrical communication with the external device, wherein the first line transmits the gate signals to a gate driver integrated circuit arranged on second tape carrier package; and a second

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pattern formed along an edge portion of the first substrate which transmits the gate signals to a second gate driver integrated circuit.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,701,167	Yamazaki
U. S. Patent No.	5,592,199	Kawaguchi et al.
U. S. Patent No.	5,565,885	Tamanoi
U. S. Patent No.	4,458,987	Sasaki et al.

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To Respond

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 571-272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Vincent E. Kovalick
July 14, 2006



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